

REMARKS

The Examiner has objected to claim 7 for formal reasons. Claim 7 has been cancelled.

The Examiner has rejected claims 1-6 and 8-12 under 35 USC 102(b) as being anticipated by Stark. In the above Amendment, claims 1-7 have been cancelled, and remaining independent claim 8 has been amended to include the limitations of claims 11 and 12 as originally filed, as well as a further limitation. Claim 8 as amended and its dependent claims are distinguishable over Stark.

Claim 8 has been amended to recite that two *subsets of groups* of photosensors (in Figure 2, for example, each group 10 of photosensors includes photosensors 12a, 12b, 12c, 12d) are interleaved along a linear array. Each group 10 is operable in a first or second mode: in a first mode, the group 10 of photosensors effectively acts as one photosensor to output a signal, while in a second mode, *individual* photosensors such as 12a and 12b *within* each group can independently output signals to output lines such as V_{ido} and V_{ide} in Figure 2.

Further as recited in claim 8 as amended, in the first mode or the second mode, signals from adjacent photosensors or groups of photosensors on the first and second output lines overlap over time. By this is meant the apparatus outputs at least two “trains” of signals, corresponding to adjacent “odd” or “even” photosensors 12 or groups of photosensors 10. This aspect is supported in the Specification as filed at paragraph 0024, this paragraph also referencing US Patent 5,638,121, incorporated by reference at the time of filing.

Attention is directed to Figures 2 and 3 of US Patent 5,638,121, and the paragraph beginning at column 4, line 55 thereof. The Figures show, in a basic case, the practical advantage of having two trains of output signals, with the odd and even signals (such as PIXEL1 and PIXEL2) overlapping over time: *only the latter portion* of each signal change, from pixel to pixel, is picked up (such as for digitization), and when the two trains are multiplexed, as in Figure 3, the readout speed is effectively doubled. As explained in the

present Specification as filed at paragraph 0025, with the claimed invention, the two-line, odd-even arrangement **remains in place** in **either mode**, when either *groups* of photosensors 10, or *individual* photosensors 12 *within* each group 10, are read out. **This** capability is captured by the last clause of claim 8 as amended; and this capability is **not** taught by Stark.

Turning to the Stark reference, the most relevant teaching is at paragraphs 0090 to 0095, a discussion of the “interlace mode.” It is clear that the interlace mode of Stark is not the same as the “two-line, odd-even” arrangement of the claim. As stated at paragraph 0090 of Stark:

[T]he frame readout [is] performed in odd and even field sub-cycles where, during the odd field sub-period, the odd lines [of a two-dimensional raster; see Figure 5A of Stark] are readout, while during the even field sub-period, the even lines are readout. The term ‘interlaced’ indicates that the even lines are located in between the odd lines [of the two-dimensional raster].

In other words, while Stark uses the odd-even language, Stark is really talking about taking two *complete*, but half-resolution, pictures (“frames” or “fields”) of an image; and reading out *all* of one picture *and then* reading out *all* of the other picture. See paragraphs 0095-0096 of Stark (emphases added):

For the odd field, the charges from two vertically adjacent unit cells 40 and 42 in lines R1 and R2 are combined (as noted by the dashed box around them) and simultaneously transferred to the sense amplifier for that column, SA₁, in a manner similar to that described with respect to FIG. 1. This is true for all unit cells in lines R1 and R2 This is followed by a similar action for lines R3 and R4, followed by lines R5 and R6, and so on, until the last two lines. * * *
[0096] **The odd field readout is followed by the readout of the even field.** The even field data *acquisition* [i.e., “taking the picture,” NOT the *readout* of the signals] is generally simultaneous with the odd field *readout*.

Note, in the above passage of Stark, how the entire *field* of odd data is read out separately from reading out the field of even data: Stark alternates whole fields or frames of image data. This is simply not the same as reading out signals from adjacent odd and even photosensors, *one pixel at a time*, so that signals from adjacent (odd, then even) photosensors or groups of photosensors overlap over time, as described in paragraphs 0024 and 0025 of the Specification as filed. Whatever the relative merits of the two systems for different purposes, the claimed invention (two trains, overlapping in time on a pixel-by-pixel basis) is fundamentally different from Stark (an *entire* odd field is read out, followed by an *entire* even field, with no time overlap). For this reason, claim 8 as amended is not anticipated by Stark.

Claims 7, 13, and 14 have been rejected under 35 USC 103 as obvious over Stark in view of Koizumi. Claim 7 has been cancelled. Claims 13 and 14 are deemed allowable as being dependent from claim 8 as amended, the patentability of which has been argued above.

New claims 15-18 have been added. Claim 15, from which claims 16-18 are dependent, includes the same limitation as in claim 8 as amended, i.e., "signals from adjacent photosensors or groups of photosensors on the first and second output lines overlap over time." For this reason, claim 15 and its dependent claims are patentable over the cited art.

The claims are therefore in condition for allowance.

No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any needed extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

Application No. 10/762,120

In the event the Examiner considers personal contact advantageous to the disposition of this case, he is hereby requested to call the undersigned attorney at (585) 423-3811, Rochester, NY.

Respectfully submitted,

/Robert Hutter, Reg. #32418/

Robert Hutter
Attorney for Applicants
Registration No. 32,418
Telephone (585) 423-3811

RH/gm